

FIG. 4

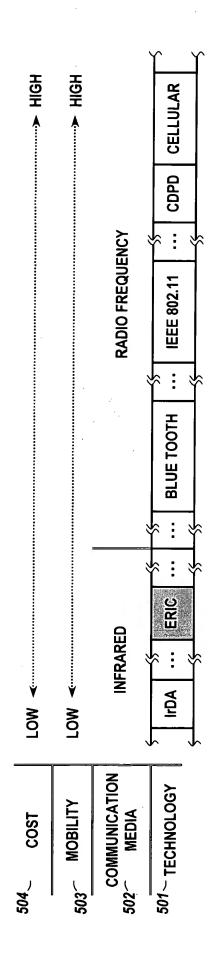
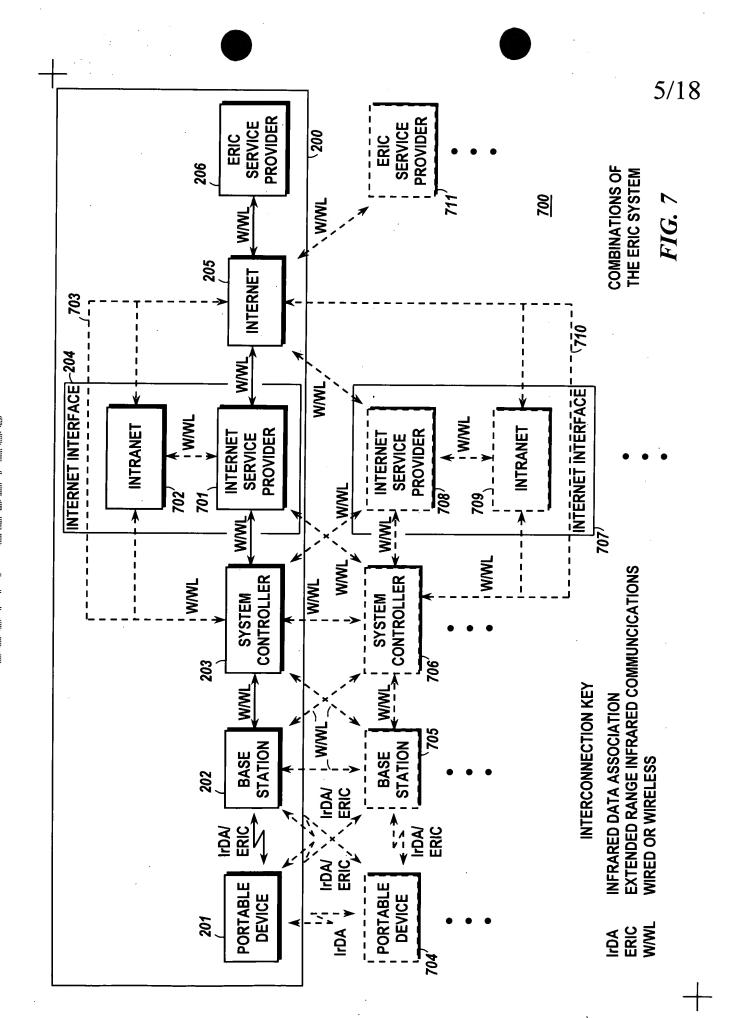


FIG. 5 500

I. EXTEND AN INFRARED COMMUNICATION RANGE OF A TRANSMIT INFRARED SIGNAL BETWEEN THE PORTABLE DEVICE AND THE BASE STATION OVER A TRANSMIT COMMUNICATION CHANNEL FROM THE PORTABLE DEVICE TO THE BASE STATION (I.E., THE UPLINK):

START

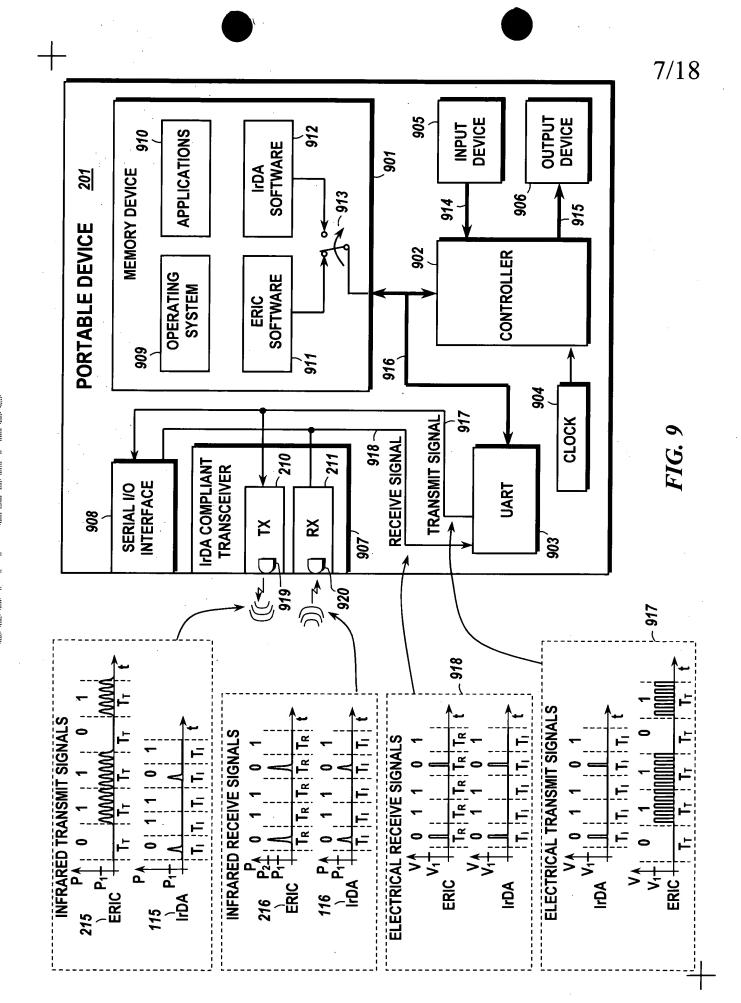
- A. BY ADDING ERIC SOFTWARE TO THE PORTABLE DEVICE TO NARROW A BANDWIDTH OF THE TRANSMITTED INFRARED SIGNAL OVER THE UPLINK FROM AN IRDA BANDWIDTH (EG., AT LEAST 115 KHZ) TO AN ERIC BANDWIDTH (EG., 20 KHZ):
 - BY LOWERING A DATA RATE OF THE TRANSMITTED INFRARED SIGNAL FROM AN IRDA DATA RATE (EG., 115.2 KBPS) TO AN ERIC DATA RATE (EG., 10 KBPS), AND
 - 2. BY CHANGING A SIGNAL MODULATION METHOD FOR THE TRANSMITTED INFRARED SIGNAL FROM AN IRDA SIGNAL MODULATION METHOD (EG. PULSE MODULATION) TO AN ERIC SIGNAL MODULATION METHOD (EG., AMPLITUDE MODULATION), AND
- B. BY USING A BASE STATION HAVING A RECEIVER THAT RECEIVES THE TRANSMIT INFRARED SIGNAL, HAVING THE ERIC DATA RATE AND THE ERIC SIGNAL MODULATION METHOD, FROM THE PORTABLE DEVICE, WHEREIN THE SENSITIVITY OF THE RECEIVER IS MAXIMIZED:
 - 1. BY DETECTING THE TRANSMIT INFRARED SIGNAL WITH A SENSITIVE PHOTODIODE DETECTOR, AND
 - 2. BY RECEIVING THE TRANSMIT INFRARED SIGNAL WITH A NARROWBAND RECEIVER.
- II. EXTEND AN INFRARED COMMUNICATION RANGE OF A TRANSMIT INFRARED SIGNAL BETWEEN THE PORTABLE DEVICE AND THE BASE STATION OVER A TRANSMIT COMMUNICATION CHANNEL FROM THE BASE STATION TO THE PORTABLE DEVICE (I.E., THE DOWNLINK):
 - A. BY TRANSMITTING THE TRANSMIT INFRARED SIGNAL, HAVING THE IRDA DATA RATE AND THE IRDA SIGNAL MODULATION METHOD, OVER THE DOWNLINK, AND
 - B. BY TRANSMITTING THE TRANSMIT INFRARED SIGNAL OVER THE DOWNLINK AT A HIGHER POWER LEVEL THAN AN IRDA POWER LEVEL REQUIRED TO MEET THE IRDA COMMUNICATION RANGE.

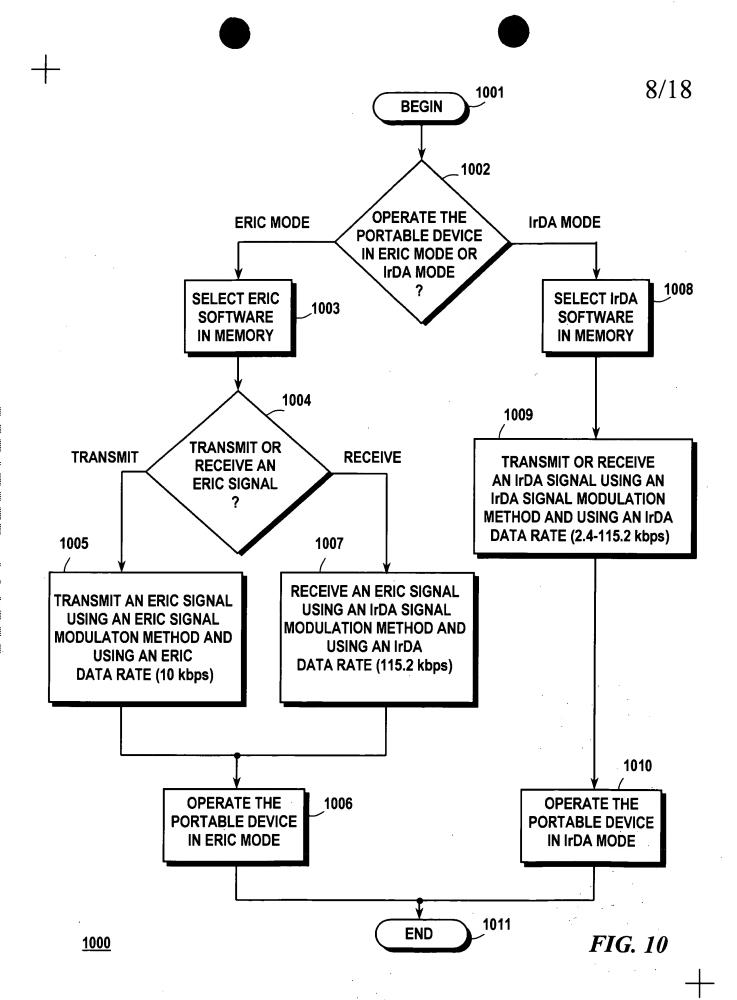


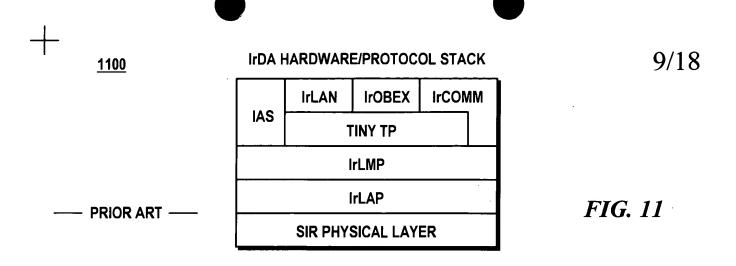
						•
204	INTERNET	-	0	+	1+ (SEVERAL)	1+ (MANY)
, 203	SYSTEM CONTROLLER	-	0	1+ (FEW)	1+ (SEVERAL)	1+ (MANY)
202	BASE	-	-	1+ (FEW)	1+ (SEVERAL)	1+ (MANY)
,201	PORTABLE DEVICE	+	+	1+ (FEW)	1+ (SEVERAL)	1+ (MANY)
	COVERAGE AREA	INDIVIDUAL	SMALL (UN-NETWORKED)	SMALL (NETWORKED)	MEDIUM	LARGE
	EXAMPLES	PRIVATE INDIVIDUAL (HOME/OFFICE)	SMALL PRIVATE GROUP (CONFERENCE ROOM)		SMALL PUBLIC GROUP (AIRPORT/HOTEL/ENTERPRISE)	LARGE PUBLIC GROUP (STATE/COUNTRY/WORLD)

800

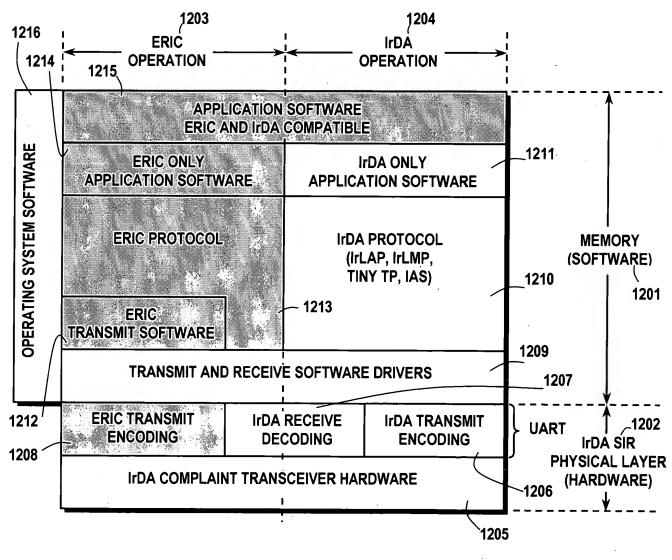
FIG. 8







ERIC OPEN SYSTEM INTERCONNECTION (OSI) - REFERENCE MODEL



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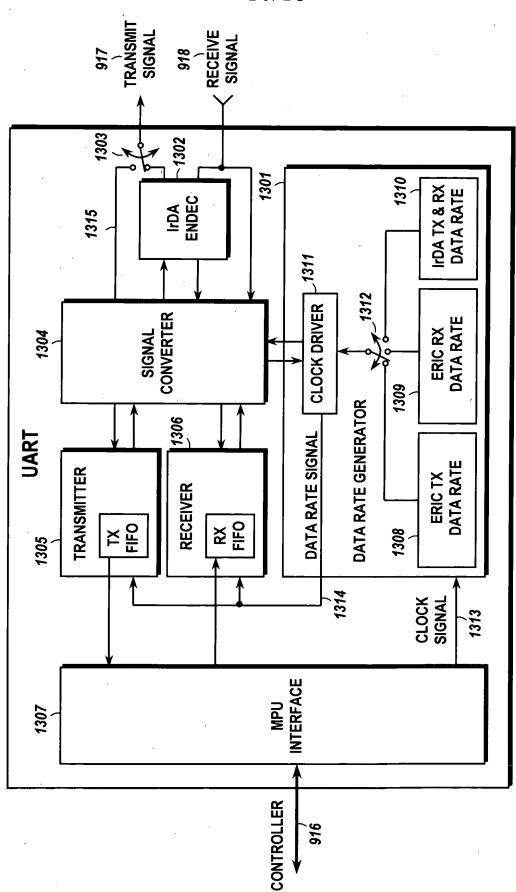
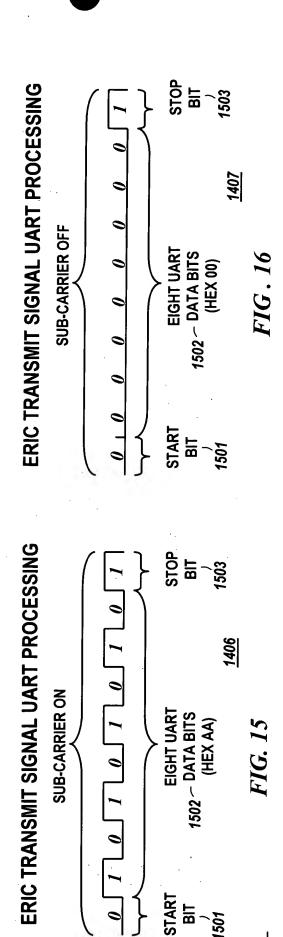
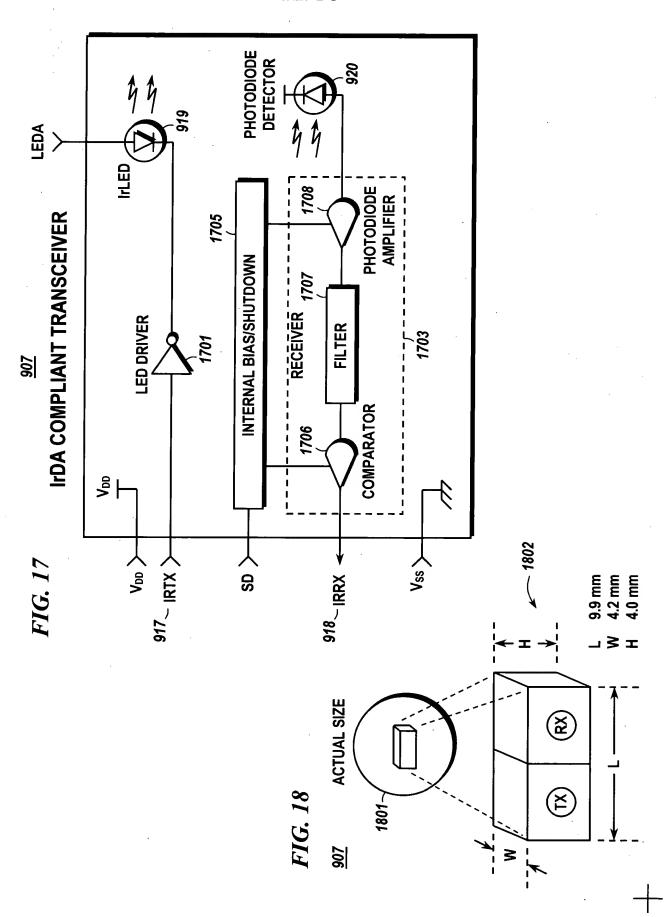


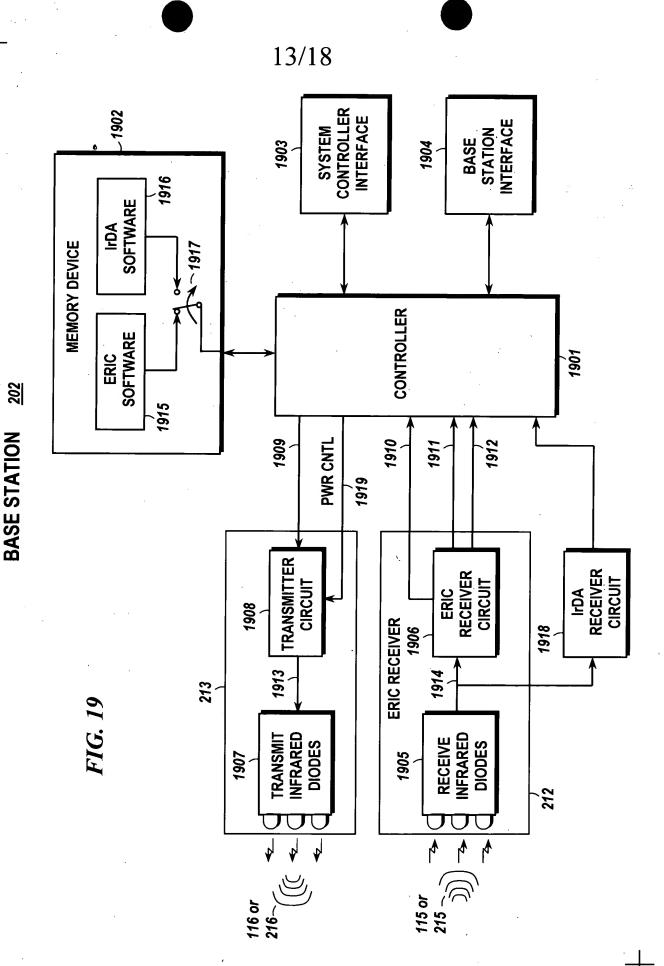
FIG. 13

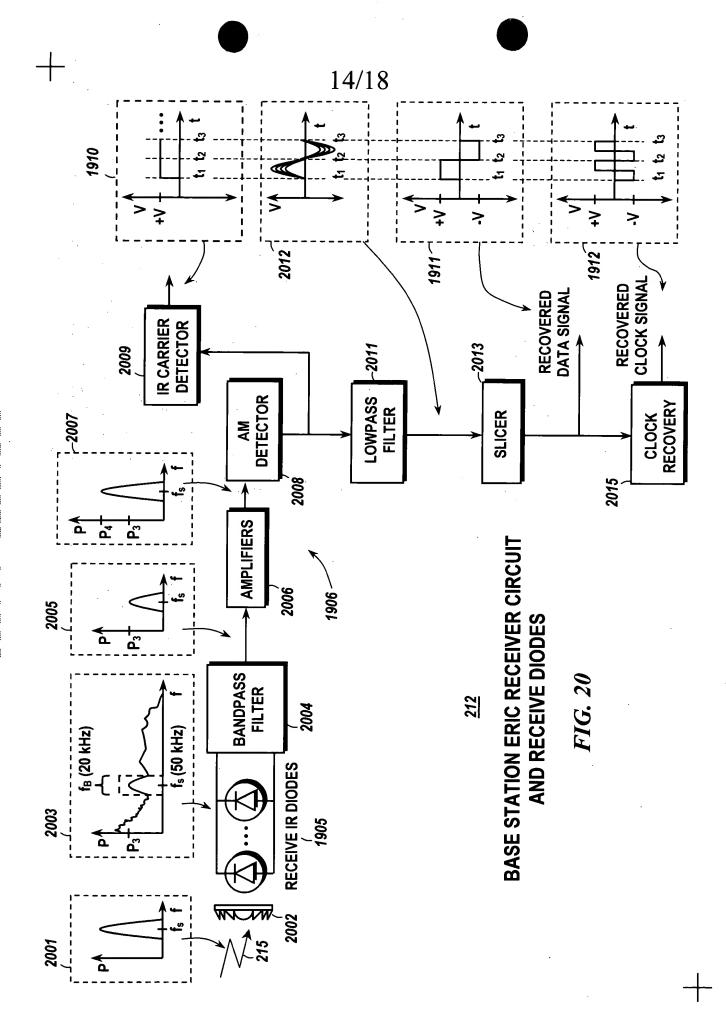
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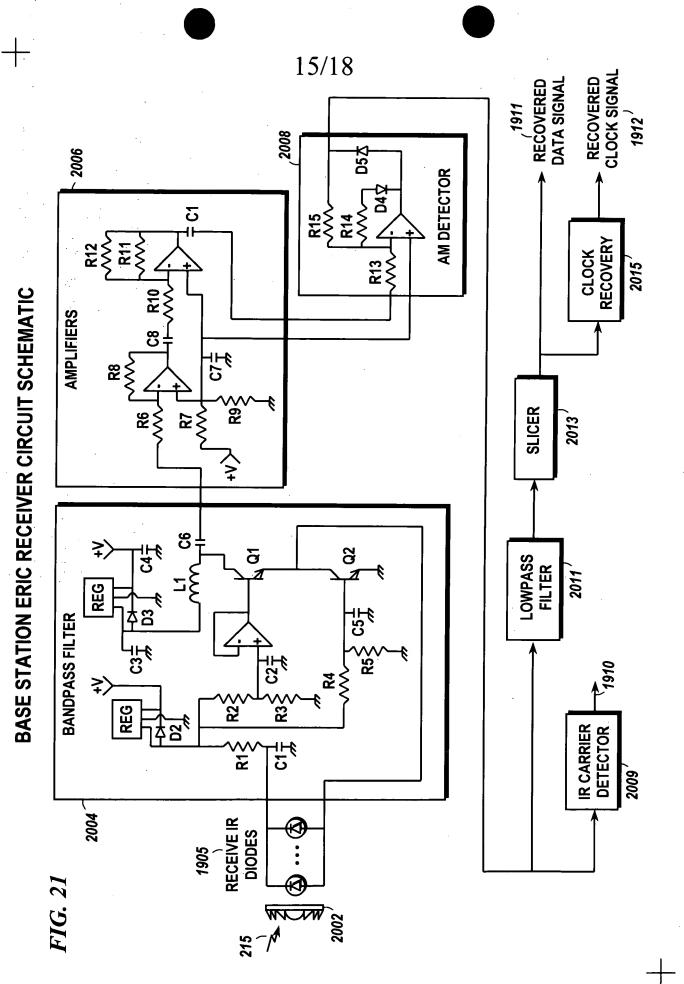


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BASE STATION TRANSMITTER CIRCUIT AND TRANSMIT IR DIODES

F1G. 2

